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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/522,059

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EXAMINER

DHINGRA, RAKESH KUMAR

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/522,059	Applicant(s) SHINOZAKI ET AL.	
	Examiner RAKESH K. DHINGRA	Art Unit 1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 July 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 January 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

Claim 1 is objected to because of the following informalities:

Amended claim recites in part “the protrusion between the substrate and the opening so that the substrate is on one side of the protrusion and the opening is on the other side of the protrusion”, which does not appear to be grammatically correct. It is suggested to amend the above limitation to read as “the protrusion between the substrate and the opening being such that the substrate is on one side of the protrusion and the opening is on the other side of the protrusion”,

Appropriate correction is required.

Response to Arguments

Applicant's arguments with respect to claim 1-6 have been considered but are moot in view of the new ground(s) of rejection. Applicant has amended claim 1 by adding new limitation “the protrusion between the substrate and the opening so that the substrate is on one side of the protrusion and the opening is on the other side of the protrusion”. Further applicant has added new claim 9.

Accordingly claims 1-9 are now pending and active.

New reference by Sakakibara et al (US 5,900,391) when combined with admitted prior art reads on amended claims 1, 4 limitations. Accordingly claims 1, 4 and 8 have been rejected under 35 USC 103 (a) as explained below. Balance claims 2, 3 and 5-7, 9 have also been rejected under 35 USC 103 (a) as explained below.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 4, 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over admitted prior art in view of Sakakibara et al (US 5,900,391).

Regarding Claims 1, 4, 8: Admitted prior art teach a method for manufacturing a substrate comprising:

providing a substrate holder 1 including:

a first frame 2 for holding a substrate 3 of the plasma display panel, said first frame holding the substrate 3 has a protrusion extending from below a bottom surface of the substrate 3 along a side surface of the substrate without being superimposed over the top surface of the substrate; and

a second frame 2 having an opening, the protrusion between the substrate and the opening being such that the substrate 3 is on one side of the protrusion and the opening is on the other side of the protrusion and situated adjacent to the first frame 2; and

providing the plasma display panel which is held by the substrate holder for deposition (e.g. Figs. 9(a), 9 (b) and page 2, line 11 to page 3, line 5).

Admitted prior art does not explicitly teach that the protrusion extends to a height greater than a height of the substrate.

Sakakibara et al teach a method of manufacturing a substrate wherein a substrate 2 is held by a support 3 that has a protrusion which extends higher than the height of the substrate to enable provide a cover 14 which is disposed on the holder 3 and does not contact the substrate 2 during heating of the substrate, and thus prevents undesired impurities from reaching the substrate (e.g. Fig. 1 and col. 3, lines 15-55).

Therefore it would have been obvious to one of ordinary skills in the art at the time of the invention to provide the substrate holder with a protrusion that extends to a height greater than a height of the substrate as taught by Sakakibara et al in the apparatus of admitted prior art to enable heat the substrate before deposition to prevent undesired impurities from reaching the substrate.

Claims 2, 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over admitted prior art in view of Sakakibara et al (US 5,900,391) as applied to claims 1, 4, 8 and further in view of Patadia et al (US 6,146,504).

Regarding Claims 2, 5: Admitted prior art in view of Sakakibara et al teach all limitations of the claim except height of protrusion between 1 mm and 100 mm.

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Patadia et al teach a deposition apparatus and method comprising a substrate support 110 for supporting a substrate and a dam 132 (protrusion) is provided around the perimeter of the substrate receiving surface of support to minimize backside deposition on the substrate. Patadia et al further teach that position and dimensions of the dam 132 (protrusion) are optimized (as a result effective variable) to prevent the reaction material reaching backside of substrate (e.g. Fig. 1, 9 and col. 7, line 65 to col. 8, line 65). It would be obvious to optimize the height of protrusion (as a result effective variable) as taught by Patadia et al, as per process limitations like type of gases, gas flow rate and gas pressure.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to optimize the height of protrusion as taught by Patadia et al in the apparatus and method of admitted prior art in view of Sakakibara et al to minimize backside deposition on the substrate.

In this connection courts have ruled:

It would have been obvious to one having ordinary skill in the art to have determined the optimum value of a cause effective variable through routine experimentation in the absence of a showing of criticality. *In re Woodruff*, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

Claims 3, 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Admitted prior art in view of Sakakibara et al (US 5,900,391) as applied to Claims 1 , 4, 8 and further in view of Hiroki et al (US 5,374,147).

Regarding Claims 3, 6: Admitted prior art in view of Sakakibara et al teach all limitations of the claim including substrate holder (frame) 1 for holding substrate, but do not teach holding means including supporting means and positioning means.

Hiroki et al teach an apparatus and method for supporting a substrate 2 by a frame 73 and where the frame comprises support means 88 and positioning means (83, 84 with stoppers 85, 86) for positioning the substrate 2 in a planar direction, wherein the substrate is held by fitting the substrate to the positioning means (83-86) and placing the substrate on the support means 88 (e.g. Fig. 12 and col. 10, lines 13-63).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use frame with support means and positioning means as taught by Hiroki et al in the apparatus and method of Admitted prior art in view of Sakakibara et al to ensure correct positioning of the substrate.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Admitted prior art in view of Sakakibara et al (US 5,900,391) as applied to Claims 1, 4, 8 and further in view of Won et al (US 6,355,108).

Regarding Claim 7: Admitted prior art in view of Sakakibara et al teach all limitations of the claim including first frame 1 for holding substrate, but do not teach first frame includes a plurality of tabs separated from each other which extend below the bottom surface of the substrate.

Won et al teach a deposition apparatus and method comprising a frame 22 with plurality of tabs 26. Won et al also teach that the tabs 26 support the substrate 28 on the deposition face and are shaped to accommodate the substrate 28, and comprise protruding contact surfaces for stabilizing a substrate on a support member during processing (e.g. Fig. 3, 4 and col. 5, line 25 to col. 6, line 35) [since applicant's specification does not explicitly describe any "tab", examiner has interpreted that the plurality of tabs as claimed refer to "Support 6a" in Fig. 6 – applicant is invited to confirm this]. Further, though, Won et al do not explicitly teach the tabs extend below the bottom surface of the substrate (during processing), the tabs 26 as taught by Won et al would obviously extend below the substrate in case frame 22 was used upside down with a deposition source disposed below the substrate.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the first frame with a plurality of tabs as taught by Won et al in the apparatus and method of Admitted prior art in view of Sakakibara et al to stabilize the substrate on the frame during processing.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Admitted prior art in view of Sakakibara et al (US 5,900,391) as applied to Claims 1, 4, 8 and further in view of Yang et al (US 6,397,776).

Regarding Claim 9: Admitted prior art in view of Sakakibara et al teach all limitations of the claim except the protrusion curves away from the substrate.

Yang et al teach a method for deposition on a substrate comprising a two source array 15 for deposition on substrate 12. Yang et al further teach that a curved substrate holder is used for simulating curved surfaces for curved substrates (e.g. Fig. 1 and col. 10, lines 1-15). It would be obvious to use substrate holder with a protrusion that curves away from the substrate as per teaching of Yang et al to enable support substrates with curved surfaces.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the substrate holder with a protrusion that curves away from the substrate as taught by Yang et al in the apparatus and method of Admitted prior art in view of Sakakibara et al to enable support substrates with curved surfaces.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

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CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RAKESH K. DHINGRA whose telephone number is (571)272-5959. The examiner can normally be reached on 8:30 -6:00 (Monday - Friday).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on (571)-272-1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Rakesh K Dhingra/
Examiner, Art Unit 1792

/Karla Moore/
Primary Examiner, Art Unit 1792